The topographical feature of the observing place seems to have a very great influence on the occurrence of first ice.

It is obvious that the relative dates would be modified, or even in some cases reversed, by varying the standard as regards either the amount of water, the nature of the containing vessel, or the hour at which it is filled. A wide range of experiments along these lines might be carried out. The use of distilled water would also be an improvement.

4. T. Okada.—Evaporation in Japan.

The evaporimeter used is described above. Results are presented from fifty stations, from Formosa, in the Tropics, to Nemuro, in latitude 43° north. The author finds that—

The annual variation of evaporation in this country is governed by rather simple laws. The variation of evaporation presents double maxima and minima. The evaporation increases gradually from January to May and reaches a minimum in June. Then it increases abruptly to a maximum in August, and again decreases abruptly to the minimum in January. These variations can be easily accounted for by considering the effect of the temperature and sunshine duration. * * * Evaporation is greatest in the Formosa and Liukiu islands and smallest in the eastern Hokkaido, showing undeniably the remarkable influence of the temperature on this climatological element. In Formosa, lying under the Tropics, the annual evaporation amounts to 1500 millimeters in average, while in Hokkaido, sharing the arctic climate of Kuriles, it is below 800 millimeters. * * *

The abnormally great evaporation in the Inland Sea region is due to the large amount of bright sunshine that there prevails. This portion of the country is completely surrounded by high mountain ranges, so that wet winds lose their loaded vapor by passing these gigantic barriers and turn into dry ascending currents of the air which excite the evaporation of water in that region. * * * The greatest annual evaporation is 1910 millimeters at Koshun in southern Formosa, and the least is 726 millimeters at Kushiro in eastern Hokkaido.

Mr. Okada discusses also the effects of wind, precipitation, and orography, and the reduction of evaporation for altitude, and presents, in a number of tables, the average annual, monthly, and daily evaporation, together with the figures for each month and year at sixteen selected stations.—*F. O. S.*

WEATHER BUREAU MEN AS INSTRUCTORS.

Mr. James L. Bartlett, Observer, Madison, Wis., will act as instructor in meteorology at the University of Wisconsin. The course in meteorology, which will be offered for the first time during the present school year, is described in the university catalogue as "Meteorology: an elementary course in the theory and practise of meteorology with especial reference to the work of the U. S. Weather Bureau. Second semester. Three hours per week."

Mr. Joseph L. Cline, Observer, Corpus Christi, Tex., has been appointed instructor in meteorology in the high school of that city. The board of school trustees expects to make this subject a permanent feature of the curriculum. The course will consist of the general study of meteorology; meteorological instruments, their construction and errors; laboratory work in constructing weather maps; forecasting; and climate in relation to agriculture, commerce, and mankind; effects upon the human race. Meteorology is obligatory in the junior and senior years. The class this year consists of 26 pupils, and the first lesson was given September 14, 1904. Mr. Cline states that with the exception of the State Medical College, where Dr. I. M. Cline delivered a series of lectures, this is the first educational institution in Texas to adopt a regular course in meteorology.

Mr. E. D. Emigh, Assistant Observer, Dodge, Kans., reports that the high school class in physical geography visited the office on September 27, and received instruction in the use of the instruments and the work of the office.

Mr. F. P. Chaffee, Section Director, Montgomery, Ala., spoke, on the 10th instant, before the Montgomery County Agricultural Association, on the subject of the Weather Bureau and the value of its work. He paid particular attention to the methods of protecting crops from damage by frost, and touched on the harmful effects of "long-range" forecasting as at present attempted.

RAINFALL IN FIJI.

[From the Quarterly Journal of the Royal Meteorological Society. July, 1904. vol. 30, p. 252.]

Mr. R. L. Holmes, of Delanasau, Bua, Fiji, has sent us the following summary of his rainfall for 1903. The rain gage is 77 feet above sea level, and 1 mile from the sea.

1903.	Rainfall.	No. of rainy days.	Greatest daily fall.
	Inches.		*Inches.*
January ...	7.75	16	2.02
February ..	3.68	12	1.06
March	7.37	18	4.00
April	5.25	12	1.76
May	0.78	7	0.40
June.....	1.75	5	1.23
July	3.72	7	1.64
August	0.59	3	0.25
September .	0.45	6	0.17
October....	7.59	9	3.82
November .	6.45	6	2.74
December..	7.17	18	1.25
Year...	52.55	119	4.00

The rainfall for 1903 was the lowest registered during the previous thirty-two years, the next lowest being 56.87 inches in 1878. The average for the thirty-two years is 95.08 inches. The greatest yearly fall was 159.51 inches in 1871.

The rainfall for 1893 was also greatly in defect in other parts of Fiji, as will be seen from the following amounts for 1902 and 1903 in the island of Viti Levu:

Stations.	1902.	1903.
	Inches.	*Inches.*
Vuci Maca.....	113.22	61.49
Korociriciri....	106.95	75.94
Nausori	122.79	76.35
Naitasiri	126.78	106.78
Muanaweni....	155.49	122.01
Nadarivatu	128.43	66.38
Ba.....	85.70	57.10
Lautoka	65.98	42.62

PROFESSOR WARD ON THE CLIMATE OF THE UNITED STATES.

Prof. Robert DeC. Ward contributes a brief and interesting account of our climate to the June number of the Geographical Teacher.[1] While the American climatologist may find no new facts in these pages, he will be interested in the concise, lucid, and comprehensive treatment of so large a subject in so small a space.

Professor Ward divides the country into three climatic zones: First. The eastern climatic province, extending from the Atlantic Ocean to the one hundredth meridian, with warm summers and cold winters, differing but little in general climatic features from east to west, but with strong winter temperature gradients from north to south; influenced but slightly by the ocean on its eastern border and subjected to the sudden local weather changes attending the passage of cyclonic storms; favored by a sufficient and seasonable rainfall, varying from 60 inches near the Gulf and on the south Atlantic coast to 20 inches at about the one hundredth meridian, so that "the world hardly contains so large an area as this so well adapted to civilized occupation."

Second. The western plateau and mountain region, lying between the one hundredth meridian and the Sierra Nevada and Cascade ranges, having great differences of altitude and

[1] The climatology of the United States; an outline. The Geographical Teacher, London. Vol. 2, pp. 212–218.